

Area of Regular Polygons

Content Standard:

- Find the area of two-dimensional figures.
- Identify the ratio of side lengths in a 30° - 60° - 90° triangle and a 45° - 45° - 90° triangle.
- Use trigonometry ratios to find side lengths and angle measures of right triangles.

Process Standard:

- Reflect on their own work

Task:

Students will explain how to find the area of a regular polygon using special right triangles. They then will solve a problem showing all necessary work. Afterwards, they will reflect on their work and decide if they explained the process well. If not, they will explain what they would have changed. Students will then do the same thing with a regular polygon that they need to use trigonometry for.

Criteria:

- Students correctly explain how to find the area of regular polygons
- Students correctly find the area of regular polygons using special right triangles
- Students correctly find the area of regular polygons using trigonometric ratios
- Students reflect on their steps to find the area

Rubric

Criteria			
Explanation of how to find area of a regular polygon using special right triangles	No or little explanation that is not correct (0 - 1 pt)	Explanation states some correct steps but not completely accurate (2 - 3 pts)	Thorough and correct explanation (4 pts)
Explanation of how to find area of a regular polygon using trigonometry	No or little explanation that is not correct (0 - 1 pt)	Explanation states some correct steps but not completely accurate (2 - 3 pts)	Thorough and correct explanation (4 pts)
Find the area of a regular polygons using special right triangles	Was not on the right track to finding the area (0 - 1 pts)	Was on the right track but did not find the area correctly (2 - 3 pts)	Found the correct area (4 pts)
Find the area of a regular polygons using trigonometry	Was not on the right track to finding the area (0 - 1 pts)	Was on the right track but did not find the area correctly (2 - 3 pts)	Found the correct area (4 pts)
Reflection on written steps	Did not reflect on steps (0 pts)	Put some thought of reflection but not much (1 pt)	Self-reflected on steps (2 pts)

Total _____/18